Re-numbered Claims

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Listing of Claims

Please amend the claims by replacing all prior versions of the claims with the following listing of claims:

- 1. (previously presented) A mammalian in vitro mRNA decapping system comprising:
 - a) polysome-free HeLa cell cytoplasmic extract;
 - b) a methylated cap analog; and
 - c) a cap-labeled mRNA substrate.
- (previously presented) The mammalian in vitro mRNA decapping system of claim 1 wherein said HeLa cell cytoplasmic extract is a HeLa S100 cell cytoplasmic extract.
 - (previously presented) The mammalian in vitro mRNA decapping system of claim wherein said HeLa cell cytoplasmic extract is prepared by dialysis of said extract containing 10% glycerol.
- 4. (cancelled)
- (previously presented) The mammalian in vitro mRNA decapping system of claim wherein said S100 cell cytoplasmic extract comprises a 100,000 x g, 1 hour supernatant from a HeLa cell lysate.
- (previously presented) The mammalian in vitro mRNA decapping system of claim 1 wherein said methylated cap analog is ^{7me}GpppG or ^{7me}GTP.
- 7 8. (cancelled)
- (previously presented) The mammalian in vitro mRNA decapping system of claim 1 wherein said cap-labeled mRNA substrate is labeled at the alpha phosphate of the cap.

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(currently amended) The mammalian in vitro mRNA decapping system of claim 1 wherein said cap-labeled mRNA substrate is labeled at the cap of said cap-labeled mRNA substrate by a label selected from the group consisting of a radioactive label, a non-radioactive isotopic label, a fluorescent moiety, a visibly-detectable moiety, a releasable substrate, [[or]] a co-factor for a chemical <u>reaction</u>, and <u>a co-factor for an enzymatic reaction</u>.

9 XI.

(previously presented) The mammalian in vitro mRNA decapping system of claim 1 wherein said cap-labeled mRNA substrate comprises poly(A) or at least one RNA element.

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(previously presented) The mammalian in vitro mRNA decapping system of claim AT wherein said RNA element is an AU-rich element.

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(previously presented) The mammalian in vitro mRNA decapping system of claim wherein said RNA element is a pyrimidine-rich element.

14 - 16. (cancelled)

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(previously presented) A kit for measuring mRNA decapping in vitro comprising:

- a) a polysome-free HeLa cell cytoplasmic extract;
- b) a methylated cap analog; and
- c) cap-labeled mRNA substrate.
- 18. (cancelled)

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(previously presented) The kit of claim wherein said cap-labeled mRNA substrate is labeled at the alpha phosphate of the cap.

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(currently amended) The kit of claim W wherein said cap-labeled mRNA substrate is labeled at the cap of said cap-labeled mRNA substrate by a label selected from the group consisting of a radioactive label, a non-radioactive isotopic label, a fluorescent moiety, a visibly-detectable moiety, a releasable substrate, [[or]] a co-factor for a chemical reaction, and a co-factor for an enzymatic reaction.

21 - 26. (cancelled)

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(previously presented) The mammalian in vitro mRNA decapping system of claim 1 further comprising means for sequestering proteins that bind to poly(A).

(previously presented) The mammalian in vitro mRNA decapping system of claim further comprising means for stimulating decapping of the cap-labeled mRNA substrate wherein the cap-labeled mRNA substrate comprises poly(A).

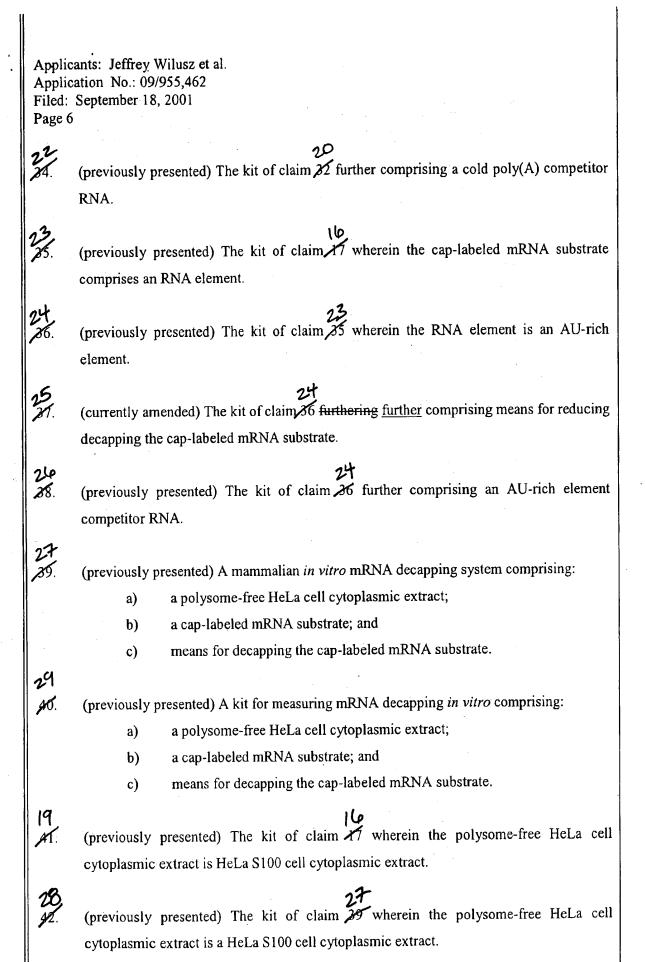
(previously presented) The mammalian in vitro mRNA decapping system of claim further comprising a cold poly(A) competitor RNA.

(previously presented) The mammalian in vitro mRNA decapping system of claim 13 further comprising means for reducing decapping of the cap-labeled mRNA substrate.

(currently amended) The mammalian in vitro mRNA decapping system of claim 12 further comprising an AU-rich element competitor RNA.

(previously presented) The kit of claim wherein the cap-labeled mRNA substrate comprises poly(A).

(previously presented) The kit of claim 22 further comprising means for stimulating decapping the cap labeled mRNA substrate.



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30 43.

(previously presented) The kit of claim 40 wherein the polysome-free HeLa cell cytoplasmic extract is a HeLa S100 cytoplasmic extract.